DOOSAN NON-CONFORMANCE REPORT

(NCR NUMBER): NCR-DD-2022-PC- 0001
ISSUE DATE: 30-June-2022

PROJECT NAME	Upper Trishuli-1 HEP (216MW)	**PROJECT NO.:**	H20002
PRODUCT NAME	Main Access Tunnel: Junction to Transformer Hall	**DWG/QIWP/SPEC.NO.**	UT1-C-090-CVL-DG-64002
LOCATION	Main Access Tunnel	**RESPONSIBLE ORG.**	M/s: Power China (PC)

(Nonconformance): **(Attachment)** ■ **YES** □ **NO**

RN-0132, dated 05.06.2022, states: *"Detailed construction drawings - in particular series of cross-sections with appropriate, arched tunnel roof geometry shall be produced. This is mandatory as the tunnel engineers must know the exact excavation geometry and respective support (installation) for individual rounds when opening these two branches."*

Furthermore, one can read in RN-0132: *"Provide a set of sections, cross sections similar as indicated above with Class III support, and a section along the "double arch roof-pillar centerline", also with Class III support."*

Subcontractor is so far not following these comments and producing a horizontal roof, instead of a double arch roof (see e.g., the blasting pattern in RFI No. UT#1/NWEDC/DHI/PC/RFI/02/MAT, dated 27.06.2022).

In combination with the sub-horizontal foliation jointing, and with the choice of an inappropriate construction method, this leads to roof instabilities and highly dangerous conditions in the excavation, as already experienced (see NCR 0054 and NCR 0055).

Deadline for rectification: Immediate! (As per OE's NCR-058 Dated 29.06.2022)

Subcontractor/Concern Dept.: M/s Power China **Package Number: PKG # 04**

PREPARED/ISSUED BY: ---------- 30-06-2022

■ Design Dept. □ Construction □ Quality Dept.

(REVIEWED BY): T-H. Yum ----------

(APPROVED BY): ----------

RECOMMENDED DISPOSITION: □ **USE-AS-IS** □ **DCN/FCN** □ **REVEISED DWG** □ **REJECT**

(Sub-Contractor) (PC)	**(Contractor Construction Department) (DHI)**
(PROPOSED BY):	**(REVIEWED BY):**
(Subcontractor Design In-Charger) ----------	(Design In-charger) ----------
(CONFIRM BY):	**(APPROVED BY):**
(Subcontractor Design Manager) ----------	(Design Manager) ----------

VERIFICATION OF DISPOSITION IMPLEMENTATION: □ **(Acceptable)** □ **(Unacceptable)**

(VERIFIED BY):	**(REVIEWED/APPROVED BY):**
(Design In-charger) ----------	(Design General Manager) ----------

TRACTEBEL ENGIE / JADE CONSULT	UT-1 HYDROPOWER PROJECT NON-CONFORMANCE REPORT	NCR No. 058

DETAIL OF PROBLEM

Section of Work:	Main Access Tunnel; Junction to Transformer Hall	Date: 28.06.2022

Non-Conformance:

RN-0132, dated 05.06.2022, states: *"Detailed construction drawings – in particular series of cross-sections with appropriate, **arched** tunnel roof geometry shall be produced. This is mandatory as the tunnel engineers must know the exact excavation geometry and respective support (installation) for individual rounds when opening these two branches."*

Furthermore, one can read in RN-0132: *"Provide a set of sections, cross sections similar as indicated above with Class III support, and a section along the "double arch roof-pillar centreline", also with Class III support."*

Contractor is so far not following these comments and producing a horizontal roof, instead of a double arch roof (see e.g. the blasting pattern in RFI No. UT#1/NWEDC/DHI/PC/RFI/02/MAT, dated 27.06.2022).

In combination with the sub-horizontal foliation jointing, and with the choice of an inappropriate construction method, this leads to roof instabilities and highly dangerous conditions in the excavation, as already experienced (see NCR 0054 and NCR 0055).

Deadline for rectification: Immediately

Issued by OE	Received by DHI	Action Dates by DHI
Name: GL	Name: Prem Shankar Singh	Proposal:
Signed:	Signed:	Repair:
Date: 29.06.2022	Date: 29-06-2022	Inspection:

CONTRACTOR'S PROPOSED ACTION TO RESOLVE THE NC:

CONTRACTOR'S PROPOSED ACTION TO PREVENT RECURRENCE:

Comments (At any stage):

DHI	OE
Proposed by:	Accepted by:
Signed by:	Signed by:
Date:	Date:

PROBLEM REGARDED AS ADDRESSED AND SOLVED

	Name:	Position:	Date:
For DHI:			
For OE:			
For NWEDC:			

Copies to: DHI, NWEDC, filing.